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ABSTRACT

Following World War I, researchers began to study psychological and behavior problems resulting from war experiences. Today these problems are defined as Posttraumatic Stress Disorders (PTSD). The PTSD problems of Vietnam veterans have been widely reported but less is known about World War II and Korean veterans. A study was undertaken to examine PTSD problems of former prisoners of war from World War II and Korea. Five variables are measured: (1) length of time as a prisoner of war (POW); (2) where prisoners were captured, since prisoners of Japan endured longer captivity, worse conditions, and more severe treatment than European POWs; (3) age; (4) rank; and (5) branch of service. A sample of POWs (N=172) from an ex-POW organization completed a questionnaire designed to assess current occurrence of PTSD. Four percent reported never being troubled by PTSD symptoms and 25 percent reported always being bothered by these symptoms. Most of the remaining 71 percent had intermittent problems with PTSD. A noteworthy percentage had stable marriages with 88 percent married and a mean duration of current marriages of 35 years. However, these marriages may not denote emotional intimacy. Only age and rank at time of capture were significantly related to PTSD with lower ranking and younger veterans demonstrating greater current problems. The relationship between type of trauma and PTSD should be examined. References and the POW questionnaire are appended. (ABL)

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POSTTRAUMATIC STRESS DISORDER IN FORMER PRISONERS OF WAR: INCIDENCE AND CORRELATES

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Abstract

Although Posttraumatic Stress Disorder (PTSD) is known to be common among those who have experienced life-threatening trauma, there have been few attempts to determine the incidence of PTSD among such groups. One hundred seventy-two former prisoners of war (POWs) from World War II and Korea, representing a well-defined group with a clearly identifiable severe stressor, responded to a questionnaire requesting demographic data and information about the occurrence of PTSD symptoms. Time in captivity ranged from one month to 46 months, with a mean of 17.5 months. These veterans showed remarkable stability in their marriages, with 88% currently married and with a mean duration of current marriables being 35 years. Fully 64.5% of this sample met DSM-III criteria for diagnosis of current PTSD. There was a variable time course of symptomatology, with four percent indicating having never been troubled since their release, while one quarter indicated always being troubled by PTSD symptoms. The remaining 61% reported intermittent patterns of symptomatology. Contrary to expectations, neither location nor duration of POW experiences predicted current symptomatology. However, both rank and age were significantly related to PTSD symptomatology, with lower ranked and younger veterans reporting greater current difficulty. Multiple regression analysis showed that of these four variables, only rank contributed significantly to the degree of current symptomatology. The fact that duration and location of captivity do not predict degree of symptoms raises questions of the nature of the stress-PTSD relationship, with some suggestion that PTSD-producing stress may be better conceptualized as a "critical moment variable" rather than one where duration of the traumatic event is crucial. Possible explanations for the predictive ability of the rank and age variables are also discussed.

Posttraumatic Stress Disorder in Former Prisoners of War: Incidence and Correlates

The evolution of the concept of Posttraumatic Stress Disorder (PTSD), as formally acknowledged and defined today (e.g., Diagnostic and Statistical Manual of Mental Disorders (DSM-III), American Psychiatric Association, 1980) can easily be traced through the experiences of wartime combatants over the last century. The concept of "shell shock" was introduced during World War I to explain the presence of specific behavioral manifestations among those experiencing intense combat. These symptoms, which included anxiety, irritability, depression, exaggerated startle responses, tremors, insomnia, and nightmares were ascribed to nonspecific neurological damage caused by the concussive effects of repeated explosions (Figley, 1978).

Following World War I, many combatants were treated for residual effects of their combat experiences, leading to the development of the concept of "war neurosis" or "traumatic neurosis." This lasted into the World War II (WWII) period, during which similar disorders were referred to as "combat exhaustion." During the Korean conflict this label was used more narrowly to describe emotional or behavioral reactions that could not be attributed simply to physical exhaustion.

During the years following World War II, reports began to appear of continuing or recurring reactions to combat stressors. These were reported at periods of five years (Futterman & Pumpian-Mindlin, 1951), fifteen years (Archibald, Long, Miller, & Tuddenham, 1962), and twenty years (Archibald & Tuddenham, 1965) after the conclusion of the war.

Nonetheless, the current concept of a posttraumatic stress reaction that was independent of predisposing psychological factors did not develop until the last decade, when many Vietnam veterans experienced such emotional reactions after their combat exposure. The sheer numbers of these Vietnam veterans experiencing continuing difficulties is probably largely responsible for the adoption in DSM-III (American

Psychiatric Association, 1980) of the diagnostic category of Posttraumatic Stress Disorder.

As awareness of the problems of combat veterans developed, the literature began to show evidence that victims of other types of physical or psychological trauma also experienced similar residual difficulties. Such reactions have been reported after natural or human-caused disasters (e.g., Baum, Gatchel, & Schaeffer, 1983; Green, Grace, Lindy, Titchener, & Lindy, 1983; Kinston & Rosser, 1974), sexual assault (Calhoun, Atkeson, & Resick, 1982), and concentration camp incarceration (Chodoff, 1963; Kinzie, 1984).

The post-World War I notion of war neurosis presumed a predisposing neurotic conflict exacerbated by the stress of combat (Figley, 1978). Empirical attempts to demonstrate predisposing factors have thus far been mixed. Foy, Sipprelle, Rueger, and Carroll (1984) found that combat exposure and adjustment while in the service were significantly related to PTSD while pre-service adjustment was not. Worthington (1978), however, presented evidence that premilitary coping skills and adjustment were the best predictors of postmilitary adjustment.

There is evidence that the Vietnam veteran population has a high incidence of PTSD, with about 30% of combat veterans reporting significant readjustment problems (Egendorf, Kadushin, Laufer, Rothbart, & Sloan, 1981). While the popular press suggests that PTSD is more common among Vietnam veterans than among veterans of previous eras, there has been some debate in the scientific literature about their relative frequencies (e.g., Carroll, 1983; Thienes-Hontos, Watson, & Kucala, 1982).

The difficulties of veterans of World War II and Korea are much less studied and identified than those of the Vietnam vet. Yet, in many ways, investigation of adjustment difficulties of World War II veterans can be a rich source of data and understanding of PTSD. With a post-stress period of some 40 years, this group provides an opportunity to identify the incidence and course of PTSD over much of a lifetime.

This study looks specifically at former prisoners of war (POWs), a delimited subgroup of veterans of World War II and Korea with a clearly identifiable severe stressor. An attempt is made to estimate the incidence of PTSD in this group and to examine the course of such difficulties over the period of 40 years since their release from prison camps. In order to identify variables that might predict residual problems, we examined length of time as a prisoner of war, where captured (prisoners of Japan generally were in captivity for longer periods and endured worse conditions and more severe treatment than European POWs), age, rank at time of capture, and branch of service.

It was expected that both situational and individual difference variables would be related to the current adjustment of these veterans. Because research with Vietnam veterans had suggested that extent and duration of combat exposure may be related to later psychological distress, we expected that severity of the stressor, as identified by duration and location of POW experiences might predict current PTSD symptomatology. Similarly, on the basis of research with WWII veterans indicating that age and rank at exposure have been related to subsequent mortality (Keehn, 1978, 1980) and on the basis of clinical observations that age at exposure contributed to the alleged higher incidence of PTSD among Vietnam veterans (Goodwin, 1980), we expected that these two variables would also predict current symptoms of PTSD in this sample of WWII veterans.

Method

Former POWs (N = 172), predominantly from World War II, with some from the Korean War, completed questionnaires distributed at a regional meeting of a national ex-POW organization. These three page questionnaires requested demographic data, brief data on military service and POW experiences, information about the current occurrence of PTSD symptoms, and information about periods of difficulty with these

symptoms.

The questionnaire (see Appendix I) includes specific symptoms from the diagnostic criteria for PTSD as delineated by DSM-III (see Appendix II), with some simplification of wording and with some specific exceptions. In interviewing former POWs, we had found it difficult to reliably assess the presence of the three specific signs reflecting "numbing of responsiveness or reduced involvement with the external world." Therefore, the category was reduced to just one item on this questionnaire: "Inability to feel strong emotions -- especially those associated with intimacy and tenderness." Likewise, because of our experience that veterans of this age group almost universally admit to a sleep disturbance and because of multiple potential causes for memory impairment in this age group, these items were omitted from Group D of the DSM-III diagnostic criteria.

Even though our questionnaire had eliminated these items from the DSM-III criteria for diagnosis of PTSD, a conservative decision was made to hold to DSM-III criteria for diagnosis of PTSD in this sample. All respondents met Criterion A, with the existence of a recognizable stressor. To achieve a diagnosis of PTSD, we required that respondents also indicate currently being troubled by one descriptor from Group B, being troubled by the only item remaining in Group C, and being troubled by two of the four remaining items in Group D.

A second measure of the severity of PTSD-related problems was obtained by scoring responses for each of the eight items on the questionnaire on a three point scale, reflecting degree of current difficulty and ranging from '0' ("Not at all") to '2' ("Troubles me a great deal"). These eight scores were then summed for a Sum of PTSD score which is used in many of the analyses that follow.

Results

One hundred seventy-two former prisoners of war completed the questionnaire. Of these, 69% had been European POWs and 24% had been in

the Pacific theater during their captivity; another 5% had been prisoners during the Korean War. Data from Stenger (1984) indicate that, as of early 1984, among veterans of the Army and Air Corps, 85% of living WWII ex-POWs had been imprisoned in Europe and 13% had been interned in the Pacific theater. These veterans ranged in age from 51 to 76, with a mean age of 63. Most (88%) were currently married, with a mean marriage duration of 35 years for their current marriages. Twenty-five percent were currently employed, while 44% had retired; another 32% reported being disabled. Seventy-four percent reported a recognized service-connected disability.

Fully half (50%) had served in the Army, while another 43% had been in either the Army Air Corps or the Air Force. A minority had been in the Navy (2%) or the Marine Corps (5%). Stenger's (1984) data reveal that 96% of the living ex-POWs of WWII had been members of the Army or Air Corps; 4% were veterans of the Navy or Marine Corps. In our sample, 42% had been enlisted men, while 44% had been noncommissioned officers (NCOs) and 14% had held an officer-level rank.

Duration of captivity had ranged from one month to 46 months, with a mean of 17.5 months (standard deviation = 14.7 months). The distribution of length of captivity was bimodal with 6 months (primarily European) and 41 months (Pacific theater) being the two modal responses.

All respondents were asked about the pattern of symptoms over the years since captivity; these veterans indicated that the patterns of PTSD symptomatology have varied considerably over time. Four percent of the sample reported <u>never</u> being troubled by PTSD symptoms and 25% reported <u>always</u> being bothered by these symptoms. About one-third (34%) had no problems initially after release, but had delayed reactions with symptoms emerging during a later period. Seven percent reported a pattern in which they initially experienced PTSD symptoms but no longer do, and 18% reported symptoms immediately after the war, later experiencing a disappearance of symptoms only to have them return

years later.

By the conservative criteria outlined above, 64.5% of this sample met the criteria for current diagnosis of PTSD. Of those serving in Europe, 60.2% had diagnosable PTSD, while 72.5% of ex-POWs from the Pacific reported the syndrome.

It had been predicted that POWs in Asia would by more susceptible to PTSD than would prisoners in Europe. This was tested first by a 2x2 chi square looking at PTSD presence vs. absence by location of captivity (Europe vs. Pacific). The resulting chi square did not support the prediction, $X^2(1, N = 158) = 1.96$, ns. Although it failed to meet assumptions for chi square analysis, a 2x3 chi square including the group of Korean War POWs was computed on an exploratory basis. It too failed to confirm the hypothesized relationship, $X^2(2, N = 167) = 2.75$, ns.

A second measure hypothesized to be related to severity of experience was duration of captivity. However, the correlation between duration of captivity and degree of stress disorder (Sum of PTSD) was not significant, $r(150) = .091$. Similar correlations computed within each of the two major subgroups of POWs (European, Pacific) also failed to approach significance.

A 2x3 chi square looking at the relationship between PTSD and rank (enlisted men, NCOs, officers) was significant, $X^2(2, N = 171) = 6.24$, $p < .05$, such that those with higher rank were less likely to have a diagnosis of PTSD. Likewise, the correlation between the summary symptom score and rank was significant, $r(150) = -.374$, $p < .001$). Similarly, the correlation between age and degree of stress disorder was significant, $r(148) = -.243$, $p < .001$.

Finally, a stepwise multiple regression was performed to compare the relative contributions of the four predictor variables (age, duration of incarceration, rank, and branch of service). Results showed that only rank contributed significantly to the degree of current symptomatology (Multiple $R = .357$; $F(1,147) = 21.45$, $p < .001$).

Discussion

Sample Characteristics

This study represents responses of 172 former prisoners of war to questions regarding their current lives, their POW experiences, and their post-service adjustment. Although these respondents were not randomly or scientifically selected, they are roughly representative of the surviving population of former POWs in the areas in which comparison data are available -- theater of captivity and branch of service.

Prevalence of PTSD

The incidence of currently diagnosable PTSD in this sample, by conservative diagnostic criteria, was 64.5% of the sample. Earlier work had established similar high levels of PTSD, though with limited or somewhat different samples. Based on clinical interviews with 30 former WWII POWs, White (1983) concluded that 85% were diagnosable as having PTSD. Incidence among Vietnam veterans is estimated at 16-35% of those who served in Vietnam (Egendorf et al., 1981) and at 50% of those in combat (Wilson, 1978). Data on Vietnam POW adjustment are not available.

Responses in the current study were by self-report, paper and pencil measures. It cannot be known with certainty if clinical interviews or clinical interviews and physiological monitoring (e.g., Malloy, Fairbank, & Keane, 1983) would elicit similarly high levels of diagnosable PTSD. One type of investigation that is clearly needed is a representative sampling procedure in which veterans undergo a multimethod assessment.

Despite the fact that the data collected represent current manifestation of PTSD symptoms, with a 64.5% current incidence, data on temporal occurrence of symptoms over the lifetime of the WWII POW demonstrate that, for most, PTSD is not a static, constant collection of symptoms. Rather, only one-quarter of the sample indicated being continuously troubled by their POW experiences. Most of the remaining ex-POWs have had an intermittent, variable pattern of symptomatology.

Some reported symptoms that did not emerge until months or years after release whereas others reported a discontinuation of difficulty after a few months. Still others (18%) demonstrated a 'U' shaped temporal pattern with post-release symptoms followed by relative quiescence during the middle years and a re-emergence of acute symptoms with advancing age, retirement, or illness. Similar patterns have been noted clinically by Archibald and Tuddenhan (1965) and by Nichols and Dickman (1983). One might suspect that re-emergence of PTSD symptoms would be temporally related to incidence of other stressors, but this remains to be tested empirically.

Correlates of Current PTSD

One somewhat surprising characteristic of this group was the fact that 88% were currently married, whereas only 7.6% were currently separated or divorced. Among the 152 married veterans, the mean duration of current marriages was 35 years. These figures suggest a remarkable degree of marital stability and contrast markedly with conceptualizations of PTSD suggesting that the inability to experience emotional closeness or to establish intimate relationships is a primary manifestation of the disorder. Vietnam veterans, in particular, have been noted for their difficulties in establishing and maintaining supportive, emotionally close marital relationships. However, our clinical impression in working with the WWII POWs and their partners has been that while many marriages have been supportive -- particularly the women supportive of the men -- this is often without a high level of emotional intimacy. Another common pattern appears to be for the marriages of these veterans to be stable, but unsatisfactory to both partners.

Thus, while difficulties establishing emotional intimacy may in fact be characteristic of PTSD, the behavioral manifestations of those difficulties are likely to be interactive with the cultural norms of the times. For the WWII veteran and his partner, marriages were expected to endure regardless of degree of intimacy, but, for the younger veteran, marriages lacking in intimacy might more typically

end in divorce.

There have been a number of studies and reviews that have suggested a relationship between duration of combat and severity of PTSD symptomatology. Goodwin (1980), for example, mentioned five studies that were said to confirm such a relationship in Vietnam veterans (Figley, 1978; Kormos, 1978; Shatan, 1978; Strayer & Ellenhorn, 1975; Wilson, 1978). Mortality and morbidity studies of WWII POWs have shown a higher incidence of death and disability among those who had more severe conditions and lengths of confinement (Keehn, 1980; Klonoff, McDougall, Clark, Kramer, & Horgan, 1976; Nefzger, 1970). Our data do not confirm this previously noted relationship.

In examining the original studies for an explanation of this discrepancy, we find that the studies cited by Goodwin (1980) actually do not confirm a relationship between duration of exposure to stressor and severity of post-release adjustment difficulities. Rather, these studies confirm the notion that combat veterans were more likely to experience adjustment difficulties than were noncombatants. Similarly, a study by Foy et al. (1984) has been said to show a relationship between extent of combat exposure and subsequent PTSD. This study actually does not address the question of duration of exposure to the trauma, but rather looks at the severity of the traumatic event itself. However, in his examination of Vietnam POWs, O'Connell (1976) did find that the longer the internment, the more likely a veteran would have received a psychiatric diagnosis post-release.

The Keehn, Klonoff et al., and Nefzger studies do demonstrate a higher mortality and morbidity incidence for Pacific POWs as opposed to European POWs, including death both from physical illnesses such as tuberculosis and from causes reflective of adjustment difficulties, including cirrhosis of the liver, accidents, and suicide. Nefzger also reports that the excess mortality among Pacific POWs had dissipated by the mid-1950s.

In previous work, the effects of duration of captivity have not

been evaluated independently of the effects of physical trauma, abuse, deprivation, and illness, but it does appear that Pacific POWs initially experienced more difficulty, both psychologically and physically than did the European POWs. If the data suggesting dissipation of differences with time are accurate, then the failure of our work to confirm a difference in degree of PTSD related to theater of service may be due to such an effect. This elimination of differences is likely to be at least partly explained by the excess mortality of those from the Pacific theater, eliminating from current consideration those showing the most extreme aftereffects of their POW experiences. However, it may also be that mortality differences are attributable to the residual physical effects of the abuse, malnutrition, and deprivation of the Pacific experience and not to a psychologically-based stress disorder.

Of the variables expected to predict current PTSD, only age and rank at time of capture were significantly related, with veterans who were younger and veterans of lower rank demonstrating greater difficulty currently. We can speculate that elements such as greater emotional maturity, intelligence, interpersonal skill, education level, commitment to the war effort, or locus of control may have been related to age and/or responsible for advancement in rank. In turn, these related variables may aid in warding off stress effects.

As more is learned about PTSD, it seems increasingly likely that it is a multiply determined disorder; possible influences on PTSD include severity of traumatic event, pre-trauma personality structure, and subsequent life events. A more detailed investigation of such diverse factors as intelligence, identification with the war effort, general maturity at time of trauma, and general coping abilities seems potentially productive for further specific inquiry.

The results of this study, that current PTSD symptomatology and severity of internment are not related, suggest that a particular focus in conceptualization of PTSD might be warranted. Specifically,

PTSD might be best conceptualized as a "critical moment" or "critical event" variable rather than as one that covaries with the duration of the traumatic episode. The lack of importance of duration of captivity in this and prior research on veterans suggests such a conceptualization, as does the existence of PTSD following single event trauma such as civilian disasters, sexual assault, or automobile accident. The current study is suggestive but not definitive in this regard and further work to elucidate the relationships between type of trauma and subsequent PTSD development would be illuminating.

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APPENDIX I.

POW Questionnaire

Background Information:

1. Age _____

2. Marital Status

_____ Married. How many years?_____

_____ Separated

_____ Divorced

_____ Widowed

_____ Never Married

3. Employment Status

_____ Currently employed

_____ Retired

_____ Disabled and not working

4. Where were you captured? _____

5. When were you captured? _____

6. How long were you a POW? _____

7. What was your rank when captured? _____

8. What was your branch of service? _____

9. Do you have a service connected disability? _____

_____ No

____ Yes _____ What percent?

What is the disability?

Below is a list of problems that often occur in the months or years following a stressful experience such as wartime combat or experiences in a prison camp. We would like to know how much each of these is troubling or distressing you now.

	Does not trouble me at all	Somewhat Troubling	Troubles me a Great Deal
1. Recurrent painful or unwanted memories of your POW or war experiences.	_____	_____	_____
2. Painful dreams or nightmares about the stressful experience.	_____	_____	_____
3. Feeling that the stressful experiences actually happening again.	_____	_____	_____
4. Inability to feel strong emotions - especially those associated with intimacy and tenderness.	_____	_____	_____
5. Excessive alertness or excessive reactions to unexpected noises.	_____	_____	_____
6. Guilt about surviving when others did not or guilt about the things you had to do in order to survive.	_____	_____	_____
7. Avoiding activities or situations that might remind you of the stressful events.	_____	_____	_____
8. Events or situations that resemble or remind you of the traumatic experiences causing an increase in the kinds of problems listed above.	_____	_____	_____

9. How often since the war have you found yourself seriously troubled by these problems?

_____ Never

_____ Always

_____ Sometimes

_____ During limited periods

10. Please check the time periods when you were (seriously) troubled by these problems? (You may check more than one time period.

_____ First year after release

_____ 1946 - 1950

_____ 1950 - 1980

_____ 1980 - 1983

11. If you would be interested in learning about the results of this questionnaire, please fill in your name and address, and we will send you a copy of the results after they are tabulated.

_____

_____

_____

_____

We thank you for your assistance in helping us to learn more about these problems among the World War II and Korean War Veterans, and especially POW's of those wars.

Appendix II. Diagnostic Criteria for Post-traumatic Stress Disorder

A. Existence of a recognizable stressor that would evoke significant symptoms of distress in almost everyone.

B. Reexperiencing of the trauma as evidenced by at least one of the following:

(1) recurrent and intrusive recollections of the event
(2) recurrent dreams of the event
(3) sudden acting or feeling as if the traumatic event were recurring, because of an association with an environmental or ideational stimulus

C. Numbing of responsiveness to or reduced involvement with the external world, beginning some time after the trauma, as shown by at least one of the following:

(1) markedly diminished interest in one or more significant activities
(2) feeling of detachment or estrangement from others
(3) constricted affect

D. At least two of the following symptoms that were not present before the trauma:

(1) hyperalertness or exaggerated startle response
(2) sleep disturbance
(3) guilt about surviving when others have not, or about behavior required for survival
(4) memory impairment or trouble concentrating
(5) avoidance of activities that arouse recollection of the traumatic event
(6) intensification of symptoms by exposure to events that symbolize or resemble the traumatic event.

From American Psychiatric Association. (1980). Diagnostic and statistical manual of mental disorders (3rd ed.). Washington, D.C.: Author.